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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	**Application No.** 10/684,642	**Applicant(s)** MURI, DAVID L.
	Examiner Sai-Ming Chan	**Art Unit** 2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on October 14, 2003 has been considered by the Examiner and made of record in the application file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ando (U.S. Patent Publication # 20060095927),** in view of **Fujino et al. (U.S. Patent # 5436899),** and in view of **Bhaskar et al. (U.S. Patent # 6154499),** and further in view of **Martinian et al. (U.S. Patent Publication #22030101408).**

Consider **claim 1, Ando** clearly disclose and shows a communication device for duplex communication (fig.1, paragraphs 54-65) comprising:

a transmitter for transmitting (fig. 1 (108), paragraph 49 (transmitting and receiving device)), during a first portion (paragraph 55; voice input) of said first period of time, a first voice signal encoded (fig. 1 (102), paragraph 78) at a first voice coding rate (paragraph 78), said first voice signal comprising first voice data (paragraph 78), first error correction data having a first error correction rate (fig.1 (105); paragraph 82) and first control data (fig. 1 (111); paragraph 81);

a receiver for receiving (fig. 1 (108), paragraph 49 (transmitting and receiving device)), during a second portion (paragraph 55, voice coding, FEC and control data are coded on the voice call) of a first period of time, a second signal having a first signal quality (fig. 1 (125); paragraph 87) and including at least second control data (fig. 1

(125); paragraph 88 (the control data that accompanies the signal is handled in the maximum rate controlling device (paragraph 81)); and

rate change as a function of first and second control data (fig 1 (125->130->111->105), paragraph 0034 (control signal from second device to first device)).

However, Ando does not specially disclose the algorithm for signal quality and the signal quality threshold and the signal quality estimation.

In the same field of endeavor, Fujinao clearly shows a processing device (fig. 1(2 and 4); column 1, lines 13-23) coupled to said transmitter and receiver and adapted for performing an algorithm (fig. 23; column 18, lines 50-68; column 19, lines 1-6 (determination algorithm)) for signal quality.

estimating said first signal quality (column 18, lines 50-68; column 19, lines 1-6),

causing said communication device to operate in a first mode (column 18, lines 50-58 (speech mode)) of operation when said signal quality estimation is above a threshold (column 18, lines 50-68; column 19, lines 1-6),

causing said communication device to operate in a second mode (column 18, lines 50-58 (silent mode)) of operation when said signal quality estimation is below said threshold (column 18, lines 50-68; column 19, lines 1-6),

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and an algorithm for signal quality, as taught by Fujinao, in order to ensure that the transmission strength is always set at the most efficient level.

However, Ando, as modified by Fujino, et al., does not specifically disclose the increase or decrease of first voice coding rate. In the same field of endeavor, Bhaskar clearly disclose that first voice coding rate changes (Abstract, lines 8-14; column 5, lines 11-39) depending on the transmission condition and the control data originally coded in the voice.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and an algorithm for signal quality, as taught by Fujinao, and to demonstrate the increase and decrease of voice coding rate, as taught by Bhaskar, in order to ensure that the voice quality is always kept at the best level.

However, Ando, as modified by Fujino, et al., and Bhaskar does not specifically disclose the increase or decrease of first error correction rate, and the voice coding rate and first error rate are adjusted as a function of first and second control data. In the same field of endeavor, Martinian et al. clearly discloses that first voice coding rate change (paragraph 0081 (more data and less error correction)) and first error correction rate changes (less data and more error correction) depending on the threshold.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and an algorithm for signal quality, as taught by Fujino, and to show the increase and decrease of error correction rate, as taught by Bhaskar, and demonstrate the increase and decrease of error correction rate, as taught by Martinian, in order to ensure that the overall information rate is optimized.

Consider **claim 2**, and **as applied to claim 1 above**, Ando, as modified by Fujinao, Bhaskar and Martinian, clearly discloses and shows a communication device as is a digital signal processor (fig. 1 (106) modulation device and (126) demodulation device).

Consider **claim 3**, and **as applied to claim 1 above**, Ando, as modified by Fujinao, Bhaskar and Martinian, clearly discloses and shows a communication device as described.

However, Ando, as modified by Fujinao, Bhaskar and Martinian, does not specially disclose the confidence in voice speech.

In the same field of endeavor, Fujino clearly shows a method wherein said first control data includes information indicating a first level of confidence in the presence of speech in said first voice signal (column 18, lines 50-68; column 19, lines 1-6), and said second control data includes information indicating a second level of confidence in the presence of speech in said second signal (column 18, lines 50-68; column 19, lines 1-6).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and an algorithm for confidence in signal quality, as taught by Fujino, in order to ensure that the transmission strength is always set at the most efficient level.

Consider **claim 4**, and **as applied to claim 3 above**, Ando, as modified by Fujino, Bhaskar and Martinian, clearly discloses and shows the communication device as described.

However, Ando, as modified by Fujino, Bhaskar and Martinian, does not specially disclose the confidence in voice speech.

In the same field of endeavor, Fujino clearly shows a communication device wherein

when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a low confidence in the presence of speech in said second signal (column 18, lines 50-68; column 19, lines 1-6; e.g. One side is talking and the other side is listening), for enabling said receiver to receive, during said second portion of said first time period, said second signal comprising said second control data, and

when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a high confidence in the presence of speech in said second signal (column 18, lines 50-68; column 19, lines 1-6; e.g. Both sides are talking), for enabling said receiver to receive, during said second portion of said first time period, said second signal encoded at a second voice coded rate and comprising at least second voice data and said second control data.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and an algorithm for signal quality and confidence, as taught by Fujino, in order to ensure that the transmission strength is always set at the most efficient level.

However, Ando, as modified by Fujino, does not specifically disclose the increase or decrease of first voice coding rate. In the same field of endeavor, Bhaskar clearly disclose that first voice coding rate changes (Abstract, lines 8-14; column 5, lines 11-39) depending on the transmission condition and the control data originally coded in the voice.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and an algorithm for identifying confidence in voice speech, as taught by Fujino, and to demonstrate the increase and decrease of voice coding rate, as taught by Bhaskar, in order to ensure that the voice quality is always kept at the best level.

Consider **claim 5**, and **as applied to claim 4 above**, Ando, as modified by Fujino, clearly discloses a communication device as described.

However, Ando, as modified by Fujino, Bhaskar and Martinian does not specifically disclose the first and second reduced voice coding rate. In the same field of endeavor, Bhaskar clearly disclose that the first and second reduced voice coding rates are essentially the same (Abstract, lines 8-14; column 5, lines 11-39; the reduced rates from maximum are very close (2400 or 1200 bps) and the choices are few so first and second reduced rates may end up to be the same).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and to demonstrate the reduced rates, as taught by Bhaskar, in order to ensure that the voice quality is always kept at the best level.

Consider **claim 6**, and **as applied to claim 4 above**, Ando, as modified by Fujino, Bhaskar and Martinian, clearly discloses a communication device, wherein said first error correction rate is caused to remain essentially constant (fig. 4 (410-413, 403), paragraphs 105-108; the determination of maximum rate does not affect the error correction rate. Although the rate has been raised, the error correction rate has not been changed. It remains constant.).

Consider **claim 7**, and **as applied to claim 4 above**, Ando, as modified by Fujino, Bhaskar and Martinian, clearly discloses a communication device, wherein said increased voice coding rate is a maximum voice coding rate (Abstract, lines 8-14; at the increased voice coding rate for transmission is always at the maximum rate).

Consider **claim 8**, and **as applied to claim 3 above**, Ando, as modified by Fujino, Bhaskar and Martinian, clearly discloses a communication device as described.

However, Ando, as modified by Fujino, Bhaskar and Martinian, does not disclose the confidence in voice speech.

In the same field of endeavor, Fujino clearly shows a communication device for:

when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a low confidence in the presence of speech in said second signal (column 18, lines 50-68; column 19, lines 1-6), for enabling said transmitter to transmit, during said first portion of said first time period, said first voice signal including said first error correction data and for enabling said receiver to receive, during said second portion of said first time period, said second signal comprising said second control data, and

when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a high confidence in the presence of speech in said second signal (column 18, lines 50-68; column 19, lines 1-6), for enabling said transmitter to transmit, during said first portion of said first time period, said first voice signal including said first error correction data for enabling said receiver to receive, during said second portion of said first time period, said second signal comprising at least second voice data, second error correction data having a second reduced error correction rate and said second control data.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and an algorithm for confidence in signal quality, as taught by Fujino, in order to ensure that the transmission strength is always set at the most efficient level.

However, Ando, as modified by Fujino, does not specifically disclose the increase or decrease of error correction rate. In the same field of endeavor, Martinian clearly discloses that first error correction rate changes when condition changes (paragraph 0081).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and to show the increase and decrease of error correction rate, as taught by Marinian, in order to ensure that the overall information rate is optimized.

Consider **claim 9**, and **as applied to claim 8 above**, Ando, as modified by Fujinao, clearly discloses a communication device as described.

However, Ando, as modified by Fujino, Bhaskar and Marinian, does not specifically disclose that the first and second reduced error correction rates.

In the same field of endeavor, Marinian clearly discloses that the first and second reduced error correction rates are essentially the same (paragraph 0081).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and indicate that the first and second reduced error coding rates are the same, as taught by Marinian, in order to ensure that overall information rate is optimized.

Consider **claim 10**, and **as applied to claim 8 above**, Ando, as modified by Fujinao, Bhaskar and Martinian, clearly discloses a communication device, wherein said first voice coding rate is caused to remain essentially constant (fig. 1 (102), paragraph 78; since only the error correction rate is affected, the voice coding rate will remain the same).

Consider **claim 11**, and **as applied to claim 8 above**, Ando, as modified by Fujinao, Bhaskar and Martinian, clearly discloses a communication device, wherein said increased error correction rate is a maximum error correction rate (fig.1 (111); paragraph 19).

Consider **claim 12**, and **as applied to claim 3 above**, Ando, as modified by Fujinao, Bhaskar and Martinian, clearly discloses a communication device, wherein said processing device is further adapted for generating a first voice activity detector number (fig.1 (102); voice coding device or voice coder detects the voice strength through the use of voice activity level detection means) corresponding to said first level of confidence.

Consider **claim 13**, and **as applied to claim 1 above**, Ando, as modified by Fujinao, Bhaskar and Martinian, clearly discloses a communication device further comprising switching means (figs 1 & 2; paragraphs 49 & 50) for causing said communication device to switch between said first and second modes of operation.

Consider **claim 14**, and **as applied to claim 13 above**, Ando, as modified by Fujinao, Bhaskar and Martinian, clearly discloses a communication device as described.

However, Ando, as modified by Fujinao, Bhaskar and Martinian, does not specifically disclose the increase or decrease of first voice coding rate during said first mode of operation by the switching means.

In the same field of endeavor, Bhaskar clearly disclose said switching means is further adapted for causing said first voice coding rate to be switched between an increased voice coding rate and a first reduced voice coding rate during said first mode of operation. (Abstract, lines 8-14; column 5, lines 11-39).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and to demonstrate the increase and decrease of voice coding rate, as taught by Bhaskar, in order to ensure that the voice quality is always kept at the best level.

Consider **claim 15**, and **as applied to claim 13 above**, Ando, as modified by Fujinao, Bhaskar and Martinian, clearly discloses a communication device as described.

However, Ando, as modified by Fujinao, Bhaskar and Martinian, does not specifically disclose said switching means is further adapted for causing said first error correction rate to be switched between an increased error correction rate and a first reduced error correction rate during said second mode of operation.

In the same field of endeavor, Martinian clearly discloses that first error correction rate changes when condition changes (paragraph 0081).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and to show the increase and decrease of error correction rate, as taught by Martinian, in order to ensure that the overall information rate is optimized.

Consider **claim 16**, and **as applied to claim 13 above**, Ando, as modified by Fujinao, Bhaskar and Martinian, clearly discloses and shows a communication device, wherein said switching means is said digital signal processor (fig. 1 (106) modulation device and (126) demodulation device).

Consider **claim 17**, Ando clearly discloses a communication device for duplex communication comprising:

a transmitter for transmitting (fig. 1 (108), paragraph 49 (transmitting and receiving device)), during a first portion () paragraph 55; voice input) of a first period of time, a first voice signal encoded (fig. 1 (102), paragraph 78) at a first voice coding rate (paragraph 78), said first voice signal comprising first voice data(paragraph 78), first error correction data having a first error correction rate(fig.1 (105); paragraph 82) and first control data (fig. 1 (111); paragraph 81) that includes information indicating a first level of confidence in the presence of speech in said first voice signal;

a receiver for receiving (fig. 1 (108), paragraph 49 (transmitting and receiving device)), during a second portion (paragraph 55,voice coding, FEC and control data are coded on the voice call) of said first period of time, a second signal having a first signal quality (fig. 1 (125); paragraph 87) and including at least second control data (fig. 1 (125); paragraph 88 (the control data that accompanies the signal is handled in the maximum rate controlling device (paragraph 81)) that includes information indicating a second level of confidence in the presence of speech in said second signal; and

However, Ando does not specially disclose the algorithm for signal quality and the signal quality threshold and the signal quality estimation and confidence in voice speech.

In the same field of endeavor, Fujinao clearly shows a processing device (fig. 1(2 and 4); column 1, lines 13-23) coupled to said transmitter and receiver and adapted for performing an algorithm (fig. 23; column 18, lines 50-68; column 19, lines 1-6 (determination algorithm)) for signal quality.

estimating said first signal quality (column 18, lines 50-68; column 19, lines 1-6),

causing said communication device to operate in a first mode (column 18, lines 50-58 (speech mode)) of operation when said signal quality estimation is above a threshold (column 18, lines 50-68; column 19, lines 1-6), wherein said processing device is further adapted for,

causing said first voice coding rate to be adjusted to a maximum voice coding rate when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a low confidence in the presence of speech in said second signal (column 18, lines 50-68; column 19, lines1-6; e.g. One side is talking and the other side is listening), for enabling said transmitter to transmit, during said first portion of said first time period, and for enabling said receiver to receive, during said second portion of said first time period, said second signal comprising said second control data, and

causing said first voice coding rate to be adjusted to a first reduced voice coding rate when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a high confidence in the presence of speech in said second signal (column 18, lines 50-68; column 19, lines1-6; e.g. Both sides are talking), for enabling said transmitter to transmit, during said first portion of said first time period, and for enabling said receiver to receive, during said second portion of said first time period, said second signal encoded at a second voice coded rate and comprising at least second voice data and said second control data, and

causing said communication device to operate in a second mode of operation when said signal quality estimation is below said threshold, wherein said processing device is further adapted for,

causing said first error correction rate to be adjusted to a maximum error correction rate when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a low confidence in the presence of speech in said second signal (column 18, lines 50-68; column 19, lines 1-6), for enabling said transmitter to transmit, during said first portion of said first time period, said first voice signal including said first error correction data having said error correction rate and for enabling said receiver to receive, during said second portion of said first time period, said second signal comprising said second control data, and

causing said first error correction rate to be adjusted to a first reduced error correction rate when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a high confidence in the presence of speech in said second signal (column 18, lines 50-68; column 19, lines 1-6), for enabling said transmitter to transmit, during said first portion of said first time period, said first voice signal including said first error correction data having said first error correction rate and for enabling said receiver to receive, during said second portion of said first time period, said second signal comprising at least second voice data, second error correction data having a second reduced error correction rate and said second control data.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and an algorithm for signal quality, as taught by Fujinao, in order to ensure that the transmission strength is always set at the most efficient level.

However, Ando, as modified by Fujino, et al., does not specifically disclose the increase or decrease of first voice coding rate. In the same field of endeavor, Bhaskar clearly disclose that first voice coding rate changes (Abstract, lines 8-14; column 5, lines

11-39; Increased rate is always the maximum rate) depending on the transmission condition and the control data originally coded in the voice.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and an algorithm for signal quality, as taught by Fujinao, and to demonstrate the increase and decrease of voice coding rate, as taught by Bhaskar, in order to ensure that the voice quality is always kept at the best level.

However, Ando, as modified by Fujino, et al., and Bhaskar does not specifically disclose the increase or decrease of first error correction rate. In the same field of endeavor, Martinian clearly discloses that first error correction rate changes when condition is favorable (paragraph 0081).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and an algorithm for signal quality, as taught by Fujinao, and to show the increase and decrease of error correction rate, as taught by Bhaskar, and demonstrate the increase and decrease of error correction rate, as taught by Martinian in order to ensure that the overall information rate is optimized.

Consider **claim 18**, and **as applied to claim 1 above**, Ando, as modified by Fujinao, Bhaskar and Martinian, clearly discloses and shows a system for duplex communication that includes a communication device (figs 1 & 2; paragraphs 49 & 50) in accordance with the communication device.

Consider **claim 19**, Ando clearly discloses and shows a method for duplex communication in a communication device, said method comprising the steps of:

transmitting (fig. 1 (108), paragraph 49 (transmitting and receiving device)), during a first portion (paragraph 55, voice input) of a first period of time, a first voice signal encoded (fig. 1 (102), paragraph 78) at a first voice coding rate (paragraph 78), said first voice signal comprising first voice data, first error correction data having a first error correction rate and first control data (paragraph 78; fig.1 (105); paragraph 82) and first control data (fig. 1 (111); paragraph 81);

receiving (fig. 1 (108), paragraph 49 (transmitting and receiving device)), during a second portion (paragraph 55, voice coding, FEC, and control data are coded on the voice call) of said first period of time, a second signal having a first signal quality (fig. 1 (125); paragraph 87) and including at least second control data (fig. 1 (125); paragraph 88 (the control data that accompanies the signal is handled in the maximum rate controlling device (paragraph 81));

rate change as a function of first and second control data (fig 1 (125->130->111->105), paragraph 0034 (control signal from second device to first device)).

However, Ando does not specially disclose the algorithm for signal quality and the signal quality threshold and the signal quality estimation.

In the same field of endeavor, Fujinao clearly shows a processing device (fig. 1(2 and 4); column 1, lines 13-23) coupled to said transmitter and receiver and adapted for performing an algorithm (fig. 23; column 18, lines 50-68; column 19, lines 1-6 (determination algorithm)) for signal quality.

estimating said first signal quality (column 18, lines 50-68; column 19, lines 1-6),

causing said communication device to operate in a first mode (column 18, lines 50-58 (speech mode)) of operation when said signal quality estimation is above a threshold (column 18, lines 50-68; column 19, lines 1-6),

causing said communication device to operate in a second mode (column 18, lines 50-58 (silent mode)) of operation when said signal quality estimation is below said threshold (column 18, lines 50-68; column 19, lines 1-6),

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and an algorithm for signal quality, as taught by Fujinao, in order to ensure that the transmission strength is always set at the most efficient level.

However, Ando, as modified by Fujino, et al., does not specifically disclose the increase or decrease of first voice coding rate. In the same field of endeavor, Bhaskar clearly disclose that first voice coding rate changes (Abstract, lines 8-14; column 5, lines

11-39) depending on the transmission condition and the control data originally coded in the voice.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and an algorithm for signal quality, as taught by Fujinao, and to demonstrate the increase and decrease of voice coding rate, as taught by Bhaskar, in order to ensure that the voice quality is always kept at the best level.

However, Ando, as modified by Fujino, et al., and Bhaskar does not specifically disclose the increase or decrease of first error correction rate, and the voice coding rate and first error rate are adjusted as a function of first and second control data. In the same field of endeavor, Martinian clearly discloses that first error correction rate changes (Paragraph 0081) depending on the transmission condition.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and an algorithm for signal quality, as taught by Fujinao, and to show the increase and decrease of error correction rate, as taught by Bhaskar, and demonstrate the increase and decrease of error correction rate, as taught by Martinian, in order to ensure that the overall information rate is optimized.

Consider **claim 20**, and **as applied to claim 19 above**, Ando, as modified by Fujinao, Bhaskar and Martinian, clearly discloses a method as described.

However, Ando, as modified by Fujinao, Bhaskar and Martinian, does not specially disclose the confidence in voice speech.

In the same field of endeavor, Fujinao clearly shows a method

wherein said first control data includes information indicating a first level of confidence in the presence of speech in said first voice signal (column 18, lines 50-68; column 19, lines 1-6), and said second control data includes information indicating a second level of confidence in the presence of speech in said second signal (column 18, lines 50-68; column 19, lines 1-6), and said step of causing said communication device to operate in said first mode of operation further comprises:

when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a low confidence in the presence of speech in said second signal (column 18, lines 50-68; column 19, lines 1-6), for transmitting during said first portion of said first time period, said first voice signal encoded at said voice coding rate and for receiving during said second portion of said first time period, said second signal comprising said second control data; and

when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a high confidence in the presence of speech in said second signal (column 18, lines 50-68; column 19, lines 1-6), for transmitting during said first portion of said first time period, said first voice signal encoded at said first voice coding rate and for receiving during said second portion of said first time period, said second signal encoded at a second reduced voice coded rate and comprising at least second voice data and said second control data.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and an algorithm for confidence in signal quality, as taught by Fujinao, in order to ensure that the transmission strength is always set at the most efficient level.

However, Ando, as modified by Fujinao, Bhaskar and Martinian, does not specifically disclose the increase or decrease of first voice coding rate. In the same field of endeavor, Bhaskar clearly disclose that first voice coding rate changes when condition is favorable (Abstract, lines 8-14; column 5, lines 11-39).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and to demonstrate the increase and decrease of voice coding rate, as taught by Bhaskar, in order to ensure that the voice quality is always kept at the best level.

Consider **claim 21**, and **as applied to claim 19 above**, Ando, as modified by Fujinao, Bhaskar and Martinian, clearly discloses a method as described.

However, Ando, as modified by Fujinao, Bhaskar and Martinian, does not specially disclose the confidence in voice speech.

In the same field of endeavor, Fujinao clearly shows a method

wherein said first control data includes information indicating a first level of confidence in the presence of speech in said first voice signal (column 18, lines 50-68; column 19, lines 1-6), and said second control data includes information indicating a second level of confidence in the presence of speech in said second signal (column 18, lines 50-68; column 19, lines 1-6), and said step of causing said communication device to operate in said second mode of operation further comprises:

causing said first error correction rate change when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a low confidence in the presence of speech in said second signal (column 18, lines 50-68; column 19, lines 1-6), for transmitting during said first portion of said first time period, said first voice signal including said first error correction data and for receiving during said second portion of said first time period, said second signal comprising said second control data; and

causing said first error correction rate change when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a high confidence in the presence of speech in said second signal (column 18, lines 50-68; column 19, lines 1-6), for transmitting during said first portion of said first time period, said first voice signal including said first error correction data and for receiving during said second portion of said first time period, said second signal comprising at least second voice data, second error correction data having a second reduced error correction rate and said second control data.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and an algorithm for confidence in signal quality, as taught by Fujinao, in order to ensure that the transmission strength is always set at the most efficient level.

However, Ando, as modified by Fujino, et al., does not specifically disclose the increase or decrease of first error correction rate. In the same field of endeavor, Martinian clearly discloses that first error correction rate changes when condition changes (paragraph 0081).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and to show the increase and decrease of error correction rate, as taught by Martinian, in order to ensure that the overall information rate is optimized.

Consider **claim 22**, and **as applied to claim 19 above**, Ando, as modified by Fujinao, Bhaskar and Martinian, clearly discloses and shows the method as described.

However, Ando, as modified by Fujinao, Bhaskar and Martinian, fails to show the switch between the first and second mode.

In the same field of endeavor, Fujinao clearly disclose the step of switching (fig. 5c, column 7, lines 15-20) between said first and second modes of operation.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, as modified by Fujinao, Bhaskar and Martinian, and an algorithm for signal quality, as taught by Fujinao, in order to ensure that multiplex is functioning flawlessly.

Consider **claim 23**, and **as applied to claim 22 above**, Ando, as modified by Fujinao, Bhaskar and Martinian, clearly discloses the method as described.

However, Ando, does not specifically disclose the increase or decrease of first voice coding rate and a first reduced voice coding rate during said first mode of operation by the step of switching.

In the same field of endeavor, Bhaskar clearly disclose a method further comprising the step of switching said first voice coding rate between an increased voice coding rate and a first reduced voice coding rate during said first mode of operation (Abstract, lines 8-14; column 5, lines 11-39).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and to demonstrate the increase and decrease of voice coding rate, as taught by Bhaskar, in order to ensure that the voice quality is always kept at the best level.

Consider **claim 24**, and **as applied to claim 22 above**, Ando, as modified by Fujinao, Bhaskar and Martinian, clearly discloses the method as described.

However, Ando, as modified by Fujinao, Bhaskar and Martinian, does not disclose the increase and decrease of the error correction rates.

In the same field of endeavor, Martinian clearly discloses the step of switching said first error correction rate between an increased error correction rate and a first reduced error correction rate during said second mode of operation (paragraph 0081).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a communication device, as taught by Ando, and to show the increase and decrease of error correction rate, as taught by Martinian, in order to ensure that the overall information rate is optimized.

Response to Amendment

Applicant's arguments filed on7/30/2007, with respect to claims 1, 17 and 19, on page 11 and through page 15 of the remarks, have been fully considered but they are moot in view of the new ground(s) of rejection necessitated by the new limitations added to claims 1, 17 and 19. See the above rejections of claims 1, 17 and 19 for the relevant interpretation and citations found in Martinian et al., disclosing the newly added limitations.

Conclusion

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Sai-Ming Chan whose telephone number is (571) 270-1769. The Examiner can normally be reached on Monday-Thursday from 6:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Sai-Ming Chan
S.C./ sc
Saiming Chan
December 19, 2007

Seema S. Rao 12-20-07
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SUPERVISORY PATENT EXAMINER
TECHNOLOGY C